

# DISTRIBUTED COMPUTING

Volume 8 1994/95

## Managing Editor

---

**F.B. Schneider**  
Cornell University  
Department of Computer Science  
Upson Hall  
Ithaca, NY 14853-7501, USA

## Editorial Board

---

**Ö. Babaoğlu**  
Università di Bologna  
Dipartimento di Matematica  
Piazza Porta S. Donato, 5  
I-40127 Bologna, Italy

**G.V. Bochmann**  
Département d'Informatique et de  
Recherche Opérationnelle  
Université de Montréal  
Case postale 6128, Succursale "A"  
Montréal, Québec H3C 3J7, Canada

**M. Broy**  
Institut für Informatik  
Technische Universität München  
Postfach 202420  
W-8000 München 2, FRG

**D.R. Cheriton**  
Stanford University  
Department of Computer Science  
Stanford, CA 94305, USA

**E.M. Clarke, Jr.**  
Carnegie Mellon University  
Department of Computer Science  
Schenley Park  
Pittsburgh, PA 15213, USA

**D. Dolev**  
Institute of Mathematics and Computer Science  
Hebrew University  
Jerusalem, Israel

**M.G. Gouda**  
The University of Texas at Austin  
Department of Computer Science  
Taylor Hall 2.124  
Austin, TX 78712-1188, USA

**C.A.R. Hoare**  
Computing Laboratory  
Programming Research Group  
Oxford University  
8-11 Keble Road  
Oxford OX1 3QD, UK

**T.L. Kunii**  
Kunii Laboratory of Computer Science  
Department of Information Science  
Faculty of Science  
The University of Tokyo  
7-3-1 Hongo Bunkyo-ku, Tokyo 113, Japan

**L. Lamport**  
Digital Equipment Corporation  
130 Lytton Avenue  
Palo Alto, CA 94301, USA

**M. Merritt**  
AT & T Bell Laboratories  
600 Mountain Avenue  
Murray Hill, NJ 07974, USA

**R.M. Needham**  
Computer Laboratory  
University of Cambridge  
Pembroke Street  
Cambridge, CB2 3QG, UK

**M. Nivat**  
Université Paris VII  
et INRIA  
167 Boulevard Malesherbes  
F-75017 Paris, France

**J.W. Schmidt**  
Universität Hamburg  
Fachbereich Informatik  
Datenbanken und Informationssysteme  
Vogt-Kölln-Strasse 30  
W-2000 Hamburg 54, FRG

**C.L. Seitz**  
Department of Computer Science  
California Institute of Technology  
Pasadena, CA 91125, USA

**P.M.B. Vitányi**  
Centre for Mathematics and  
Computer Science  
P.O.Box 4079  
NL-1009 AB Amsterdam  
The Netherlands



Springer International

# DISTRIBUTED COMPUTING

---

## Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

## *Special regulations for photocopies in the USA*

Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0172-8083, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

## *Other regulations*

Authors publishing in this journal can, under certain conditions, benefit from library and photocopy fees collected by VG WORT. Authors of German nationality and those resident in the Federal Republic of Germany or Berlin (West), as well as citizens of Austria, Switzerland and member countries of the European Community, may apply to Verwertungsgesellschaft WORT, Abteilung Wissenschaft, Goethestraße 49, D-8000 München 2, for detailed information.

Springer-Verlag Berlin Heidelberg New York Tokyo

Printed in Germany by Universitätsdruckerei H. Stürtz AG Würzburg

© Springer-Verlag 1995

Printed in Germany

## Contents of volume 8

No. 1: pp 1–58 published August 25, 1994  
 No. 2: pp 59–114 published October 12, 1994  
 No. 3: pp 115–162 published March 27, 1995  
 No. 4: pp 163–218 published June 28, 1995

Afek Y, Hendler D: On the complexity of global computation in the presence of link failures: the general case 115  
 Aharonson E, Attiya H: Counting networks with arbitrary fan-out 163  
 Ahuja M → Shafer K 211  
 Attiya H, Herlihy M, Rachman O: Atomic snapshots using lattice agreement 121  
 Attiya H → Aharonson E 163  
 Baldoni R, Ciciani B: A class of high performance Maekawa-type algorithms for distributed systems under heavy demand 171  
 Bernstein AJ → Singh G 151  
 Boukerche A, Tropper C: Parallel simulation on the hypercube multiprocessor 181  
 Burns JE, Neiger G: Fast and simple distributed consensus 59  
 Choy M, Singh AK: Adaptive solutions to the mutual exclusion problem 1  
 Ciciani B → Baldoni R 171  
 Datta AK → Flatebo M 133  
 Eğecioğlu Ö, Singh AK: Naming symmetric processes using shared variables 19

Flatebo M, Datta AK, Schoone AA: Self-stabilizing multi-token rings 133  
 Hendler D → Afek Y 115  
 Herlihy M → Attiya H 121  
 Hesselink WH: Wait-free linearization with an assertional proof 65  
 Ibaraki T, Nagamochi H, Kameda T: Optimal coteries for rings and related networks 191  
 Juang TT-Y → Venkatesan S 105  
 Kameda T → Ibaraki T 191  
 Kessels JLW: Calculational derivation of a counter with bounded response time and bounded power dissipation 143  
 Lubitch R, Moran S: Closed schedulers: a novel technique for analyzing asynchronous protocols 203  
 Marzullo K, Sabel LS: Efficient detection of a class of stable properties 81  
 Moran S → Lubitch R 203  
 Nagamochi H → Ibaraki T 191  
 Neiger G → Burns JE 59

Rachman O → Attiya H 121  
 Sabel LS → Marzullo K 81  
 Sandoz A → Schiper A 93  
 Schiper A, Sandoz A: Strong stable properties in distributed systems 93  
 Schoone AA → Flatebo M 133  
 Shafer K, Ahuja M: Implementation of hierarchical F-channels for high-performance distributed computing 211  
 Singh AK → Choy M 1  
 Singh AK → Eğecioğlu Ö 19  
 Singh G, Bernstein AJ: A highly asynchronous minimum spanning tree protocol 151  
 Tang J: On multilevel voting 39  
 Tropper C → Boukerche A 181  
 Venkatesan S, Juang TT-Y: Efficient algorithms for optimistic crash recovery 105  
 Indexed in *Current Contents*